

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated December 10, 2003 (U.S. Patent Office Paper No. 4). In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Applicants respectfully thank the Examiner and the Primary Examiner for their consideration in having a personal interview with the Applicants' representatives and their undersigned attorney on February 17, 2004. During the interview, Applicants' attorney presented draft claims to replace the claims then currently on file, and discussed the differences between the prior art of record and the present invention as recited in the new claims. It is understood that the Examiner agreed that the draft new claims appeared to distinguish from the prior art of record, but that further consideration of the prior art with respect to those new claims would have to be given upon the filing of an official response.

Status of the Claims

As outlined above, claims 1 - 12 are being canceled without prejudice or disclaimer, while new claims 13 - 31 are hereby submitted for consideration.

Prior Art Rejections

The Examiner rejected claims 1 - 3 under 35 U.S.C. § 102(e) as being anticipated by USP 6,236,525 to Cates et al. (Cates '525).

The Examiner rejected claims 9 - 11 under 35 U.S.C. § 102(e) as being anticipated by USP 6,377,416 to Kikuta et al. (Kates '416).

Further, the Examiner rejected the claims under 35 U.S.C. § 103(a) as being unpatentable as follows: (a) Claim 8 in view of Cates '525; (b) Claim 10 in view of Kikuta '416; (c) Claim 12 in view of USP 6,411,452 to Cloke et al. and Cates '525; (d) Claims 5 - 7 in view Cates '525 and Kikuta '416; and (e) Claim 4 in view of Cates '525 and USP 4,188,646 to Sordello et al. Applicants respectfully traverse the above-outlined rejections.

The present invention as now recited in claim 13 is directed to a magnetic recording system for perpendicular recording hard disk drives. The system incorporates a magnetic head for recording and reproducing information, and a perpendicular magnetic recording medium having a perpendicular magnetic recording layer, the perpendicular

magnetic recording layer having a burst area. The burst area has a first area with a burst signal recorded therein for positioning the magnetic head, and a second area with a dummy signal recorded therein. A bit length of the dummy signal is less than a bit length of the burst signal. Support for this recitation may be found on p.14, line 18 - p.15, line 8; p.15, line 9 - p.17, line 19; and Fig. 5.

The present invention as now recited in claim 15 is directed to a magnetic recording system for perpendicular recording hard disk drives. The system incorporates a magnetic head for recording and reproducing information, and a perpendicular magnetic recording medium having a perpendicular magnetic recording layer, the perpendicular magnetic recording layer having a burst area. The burst area has a first area with a burst signal recorded therein for positioning the magnetic head, and a second area with a dummy signal recorded therein, wherein the burst area is formed with a bit length of the dummy signal less than a bit length of the burst signal, such that the burst signal is extractable from the burst area. Support for this recitation may also be found on p.14, line 18 - p.15, line 8; p.15, line 9 - p.17, line 19; and Fig. 5.

The present invention as now recited in claim 22 is directed to a magnetic recording system for perpendicular recording hard disk drives. The system incorporates a magnetic head for recording and reproducing information, and a perpendicular magnetic recording medium having a perpendicular magnetic recording layer, the perpendicular magnetic recording layer having a burst area. The burst area having a first area with a burst signal recorded therein for positioning the magnetic head, and a second area with a dummy signal recorded therein, wherein a frequency of the dummy signal is higher than a frequency of the burst signal. Support for this recitation may be found on p.14, line 18 - p.15, line 8; p.15, line 9 - p.17, line 19; and Fig.5.

The present invention as now recited in claim 24 is directed to a magnetic recording system for perpendicular recording hard disk drives. The system incorporates a magnetic head for recording and reproducing information, and a perpendicular magnetic recording medium having a perpendicular magnetic recording layer, the perpendicular magnetic recording layer having a burst area. The burst area having a first area with a burst signal recorded therein for positioning the magnetic head, and a second area with a dummy signal recorded therein, wherein the burst area is formed with a frequency of the dummy signal higher than a frequency of the burst signal, such that the burst signal is extractable from the

burst area. Support for this recitation may also be found on p.14, line 18 - p.15, line 8; p.15, line 9 - p.17, line 19; and Fig.5.

The present invention as now recited in claim 27 is directed to a magnetic recording system for perpendicular recording hard disk drives. The system incorporates a magnetic head for recording and reproducing information, and a perpendicular magnetic recording medium having a perpendicular magnetic recording layer, the perpendicular magnetic recording layer having a burst area. The burst area has a first area with a burst signal recorded therein for positioning the magnetic head, and a second area with a dummy signal recorded therein, wherein a recording density of the dummy signal is higher than a recording density of the burst signal. Support for this recitation may be found on p.14, line 18 - p.15, line 8; p.15, line 9 - p.17, line 19; and Fig.5.

The present invention as now recited in claim 29 is directed to a magnetic recording system for perpendicular recording hard disk drives. The system incorporates a magnetic head for recording and reproducing information, and a perpendicular magnetic recording medium having a perpendicular magnetic recording layer, the perpendicular magnetic recording layer having a burst area. The burst area having a first area with a burst signal recorded therein for positioning the magnetic head, and a second area with a dummy signal recorded therein, wherein the burst area is formed with a recording density of the dummy signal less than a recording density of the burst signal, such that the burst signal is extractable from the burst area. Support for this recitation may also be found on p.14, line 18 - p.15, line 8; p.15, line 9 - p.17, line 19; and Fig.5.

Among the main features of the present invention in its various embodiments, the invention is specifically directed to magnetic recording systems for perpendicular recording hard disk drives. The perpendicular magnetic recording medium of the system incorporates a perpendicular magnetic recording layer having a burst area. Among the various embodiments, that burst area is defined as having a first area with a burst signal recorded therein for positioning the magnetic head, and a second area with a dummy signal recorded therein, wherein a bit length of the dummy signal is less than a bit length of the burst signal, or the burst area is formed with a bit length of the dummy signal less than a bit length of the burst signal, such that the burst signal is extractable from the burst area. In another embodiment, the frequency of the dummy signal is higher than a frequency of the burst signal, or the burst area is formed with a frequency of the dummy signal higher than a frequency of the burst signal, such that the burst signal is extractable from the burst area. In a

further embodiment, the recording density of the dummy signal is higher than a recording density of the burst signal, or the burst area is formed with a recording density of the dummy signal less than a recording density of the burst signal, such that the burst signal is extractable from the burst area.

With respect to the rejection of claims 1 -12 in view of prior art, as noted above, claims 1 - 12 are being canceled without prejudice or disclaimer, thereby rendering the rejections moot. However, to the extent the prior art may be applied, in contrast to the present invention, Cates '525 is specifically directed to magnetic tape devices, not hard disk drives, and to longitudinal recording, not perpendicular. Consequently, Cates '525 discloses very different technology from that of the present invention, and is thus not even relevant to the structure or operation of the present invention. Cates '525 can neither anticipate nor render obvious each and every feature of the present invention as now claimed.

Kikuta '416 is merely directed to a semiconductor device for processing data signals at high speed. This reference fails to disclose, teach or suggest any structure or operation related to magnetic recording systems for perpendicular recording hard disk drives, wherein the perpendicular magnetic recording medium of the system incorporates a perpendicular magnetic recording layer having a burst area with specifically defined characteristics similar to those of the present invention. Consequently, Kikuta '416 also can neither anticipate nor render obvious each and every feature of the present invention as now claimed.

Attached hereto are illustrations highlighting the differences between the present invention and the prior art, both as cited and in general.

The remaining cited prior art are merely secondary references for showing features recited in the now-canceled claims. None of those secondary references provides any disclosure, teaching or suggestion to make up for the deficiencies in either Cates '525 or Kikuta '416 such that any combination of all those references could anticipate or render obvious each and every feature of the present invention as now claims. Rather, the present invention as a whole is distinguishable and thereby allowable over the prior art of record.

Conclusion

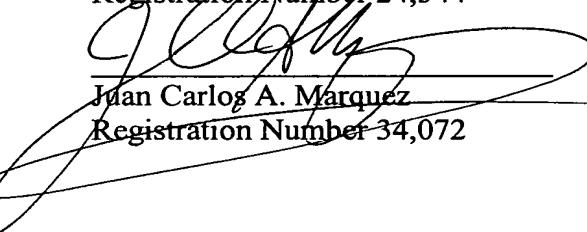
In view of all the above, Applicant respectfully submits that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor

rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,

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